

1. Rejection Under Section 112:

Claims 9 and 10 stand rejected under Section 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 10 has been amended to delete the word “horizontal” to overcome the Examiner’s rejection. Applicant respectfully disagrees with the Examiner’s assertion that Claims 9 and 10 when read together are indefinite. Claim 9, as the Examiner correctly points out, states that the tile thickness is greater than the panel thickness. Claim 10, however, simply states that the “edge portion” of the panel is thicker than the tile, not that the panel is thicker than the tile. Accordingly, Applicant respectfully submits that there is nothing indefinite about Claims 9 and 10. For this reason, the Examiner’s rejection based on Section 112 should be withdrawn.

2. Rejection Under Section 103:

Claims 1-15 stand rejected as being obvious in view of Stoakes and Pracht. Applicant respectfully submits, however, that Applicant’s invention is distinguishable over the combination of those references, for the following reasons:

In Applicant’s invention, the frame is made of horizontal and vertical mullions, wherein each opening between the mullions has a panel connected to the frame and extended across the opening. The front surface of the panels, in such case, extends along substantially the same plane as the front surface of the frame, or at least slightly in front of the frame. This enables the tiles to be larger than the panels, and for the tiles to be at least partially overlaid and secured onto the frame members, such that no connector (for securing the tiles to the frame) would have to be visible from the exterior.

This is not true in Stoakes. Stoakes shows a wall structure with panels, but the panels are secured to the main frame members by outwardly extending auxilliary frame members 32, i.e., that extend outward relative to the front surface of the panels. See column 3, lines 16-22. In Stoakes, because the auxiliary frame members extend outward beyond the front of the panels, it would not be possible for the tiles to be larger than the panels, secured directly to the panels (using structural silicon), and overlaid onto the frame members, without any of the auxilliary frame members being visible from the exterior.

Pracht also does not suggest forming the frame and panels along substantially the same plane, to enable the tiles to be secured directly to the panels and frame. In Pracht, the surface upon which the tiles are secured is a corrugated structure that entirely covers the frame members, wherein the tiles would not be capable of being directly connected to the frame, unlike in Applicant's invention.

Claims 1 and 13 have been amended to emphasize these differences.

3. Conclusion:

For all of the above reasons, Applicant respectfully submits that Claims 1-15 are in condition for allowance, and earnestly requests that a Notice of Allowance be entered in this case.

Respectfully submitted,



J. John Shimazaki
Registration No. 37,236

DICKINSON WRIGHT PLLC
1901 L Street, N.W.
Suite 800
Washington, D.C. 20036
202-457-0160
202-659-1559 (fax)
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VERSION OF CLAIMS SHOWING CHANGES

Please amend the claims as follows:

1. (amended) A curtain wall structure comprising:

horizontal mullions spaced a predetermined distance apart from each other, and vertical mullions spaced a predetermined distance apart from each other, wherein said horizontal and vertical mullions are connected together to form a frame having a plurality of openings therein, wherein a front surface of said frame extends along a first plane;

support panels made of a light weight material connected to said frame, said panels extending across said openings, and forming a front surface extending substantially along or slightly in front of said first plane; and

tiles positioned on said frame, each of said tiles being adapted to be larger than said panels, such that each of said tiles is positioned on the front [side] surface of said panels and extended over said frame, wherein structural silicon is used to secure said tiles to said panels.

2. The structure of claim 1, wherein each of said support panels has an angled edge that extends around the perimeter thereof, said angled edge being adapted to secure said panels to said frame and provide rigidity to said panels.

3. The structure of claim 1, wherein said support panels have a front surface that extends substantially along the same plane as the front surface of said frame.

4. The structure of claim 2, wherein fasteners are used to secure said angled edge of said panels to said horizontal and vertical mullions.

5. The structure of claim 1, wherein a gasket is provided between the perimeter of said tiles and said frame to seal the space between said tiles and said frame.
6. The structure of claim 1, wherein a top retainer is provided along the upper edge of said frame to retain the tiles that are located on the upper part of said frame, said top retainer being connected to said upper edge of said frame along one of said horizontal mullions, and wherein a bottom retainer is provided along the lower edge of said frame to retain the tiles that are located on the lower part of said frame, said bottom retainer being connected to said lower edge of said frame along another of said horizontal mullions.
7. The structure of claim 1, wherein in the space between adjacent tiles gaskets or sealants are provided to form a seal between said tiles and said frame.
8. (amended) The structure of claim 1, wherein [each of said tiles has dimensions in the horizontal and vertical directions that are greater than the distances between the horizontal and vertical mullions, respectively, and wherein] each of said support panels has dimensions in the horizontal and vertical directions that are substantially the same as the distances between the horizontal and vertical mullions, respectively.
9. The structure of claim 1, wherein said panels have a first predetermined thickness, and said tiles have a second predetermined thickness, wherein said second predetermined thickness is greater than said first predetermined thickness.
10. (amended) The structure of claim 9, wherein each of said support panels has [a horizontal] an edge portion extending around the perimeter that has a rearward dimension that is greater than said second predetermined thickness.

11. The structure of claim 1, wherein said tiles are made of porcelain or ceramic material.

12. The structure of claim 10, wherein said tiles are no thinner than about three eighths of an inch thick, and said support panels are made of aluminum that is about one eighth inch thick.

13. (amended) A curtain wall structure comprising:

horizontal and vertical mullions spaced apart from each other, wherein said horizontal and vertical mullions are connected together to form a frame having a plurality of openings therein;

support panels connected to said frame, each of said panels having substantially the same size and shape as said openings, and having a perimeter edge extending normal to a front surface thereof, wherein said front surface of said panels extends along a plane that is substantially the same as or in front of the front surface of said frame; and

tiles connected to said frame and said panels, wherein structural silicon is used to secure said tiles to said panels, wherein no visible cover or connecting structure is required to be extended from said frame to connect said tiles to said frame.

14. (amended) The structure of claim 13, wherein each of said [panels and] tiles is larger in the horizontal and vertical dimensions than said openings, and wherein said [panels] tiles are connected to said frame along the perimeter edge thereof.

15. A method of forming a curtain wall comprising:

providing a frame having horizontal and vertical mullions spaced apart from each other, said horizontal and vertical mullions forming a plurality of openings therein;

connecting a plurality of support panels made of a light weight material onto said frame, said panels being positioned on said frame within said openings, wherein each of said panels has substantially the same size and shape as said openings, and has a front surface that extends along a plane that is substantially the same as, or in front of, the front surface of said frame; and

applying structural silicon to said panels and attaching tiles onto said panels using said structural silicon.

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